RE: Recommended AM based JEM

Thomas Bateson to: Brattin, Bill 10/01/2012 07:46 PM

From: Thomas Bateson/DC/USEPA/US
To:
Cc: Bob Benson/R8/USEPA/US@EPA, Danielle DeVoney/DC/USEPA/US@EPA, David Berry/R8/USEPA/US@EPA, "HILBERTJ@UCMAIL.UC.EDU" <HILBERTJ@UCMAIL.UC.EDU>, Krista Christensen/DC/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA

Thanks Bill. It was a bit confusing but we'll need that plot anyway for the GM, right? And it makes sense to look at how the proposed method works in both spaces before we hard-wire the AM approach so it would be good to see now, so we can settle on the common approach of a three piece exponential function for indoor jobs and a two piece model for outdoor jobs. Until we're sure about how this proposed approach works for both AM-ish and GM-ish (better to say models fit in regular vs. natural log space).

We really need the GOF stats for the latest work to see the linear vs. exponential and to compare the three piece fxs to the previous 2 piece fxs. Adding the LOESS alongside the linear and exponential fxs (with GOF) would make clear that the use of a parametric function was not a great departure from the non-parametric.

Hope that does not take too long to show this to everyone's satisfaction. I know Bob wants resolution by Friday but we'll need those stats first. I do not think we could concur without at least this basic information.

Tom
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-----"Brattin, Bill" <brattin@srcinc.com> wrote: -----
To: Bob Benson/R8/USEPA/US@EPA, Thomas Bateson/DC/USEPA/US@EPA
From: "Brattin, Bill" <brattin@srcinc.com>
Date: 10/01/2012 06:03PM
Cc: Danielle DeVoney/DC/USEPA/US@EPA, David Berry/R8/USEPA/US@EPA, "HILBERTJ@UCMAIL.UC.EDU" <HILBERTJ@UCMAIL.UC.EDU>, Krista Christensen/DC/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA
Subject: RE: Recommended AM based JEM
The plot using a log scale was just FYI.
If it causes confusion, it can be omitted.

I do not think fitting in l0og space is appropriate for deriving the AM-based JEM, only for deriving the GM=based JEM.
As Bob noted, the Appendix will present both approaches.

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Bill Brattin
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From: Bob Benson [mailto:Benson.Bob@epamail.epa.gov]
Sent: Monday, October 01, 2012 12:42 PM
To: Thomas Bateson
Cc: Brattin, Bill; Danielle DeVoney; David Berry; HILBERTJ@UCMAIL.UC.EDU; Krista Christensen; Leonid Kopylev
Subject: Re: Recommended AM based JEM

Bill will have to answer this one.

Thomas Bateson---10/01/2012 12:33:19 PM---The text: "yielded a less-pleasing fit in log-space" led me to believe you fit the functions in log-
From: Thomas Bateson/DC/USEPA/US
To: Bob Benson/R8/USEPA/US@EPA,
Cc: brattin@srcinc.com, Danielle DeVoney/DC/USEPA/US@EPA, David Berry/R8/USEPA/US@EPA, Krista Christensen/DC/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA, HILBERTJ@UCMAIL.UC.EDU
Date: 10/01/2012 12:33 PM
Subject: Re: Recommended AM based JEM

The text: "yielded a less-pleasing fit in log-space" led me to believe you fit the functions in log-space. I now see that you just plotted the same exp. and linear function that were fit in linear space but shown in log-space. Don't you need to fit the functions in the two different spaces?
-----Bob Benson/R8/USEPA/US wrote: -----
To: Thomas Bateson/DC/USEPA/US@EPA
From: Bob Benson/R8/USEPA/US
Date: 10/01/2012 02:25PM
Cc: brattin@srcinc.com, Danielle DeVoney/DC/USEPA/US@EPA, David Berry/R8/USEPA/US@EPA, HILBERTJ@UCMAIL.UC.EDU, Krista Christensen/DC/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA
Subject: Re: Recommended AM based JEM
We think the plots in Figure 1 are correctly labeled. The red line (linear) goes negative in both plots; the blue line (exponential) stays positive in both plots. In the lower plot, the exponential has 3 segments; the linear has 2 segments because negative values cannot be shown on a log plot.
We are willing to supply fit statistics. Can you tell us more specifically what ones you want?
At this point, I am assuming that Linda can do the weighted calculations in SAS. Bill has a call with UC tomorrow to discuss a schedule. If we need some statistical help, we will contact you.
Thomas Bateson---10/01/2012 11:45:54 AM---Bob, The lower panel of Figure 1 appear to reverse the colors and labeling of the two functions.
From: Thomas Bateson/DC/USEPA/US
To: Bob Benson/R8/USEPA/US@EPA,
Cc: brattin@srcinc.com, Danielle DeVoney/DC/USEPA/US@EPA, David Berry/R8/USEPA/US@EPA, Krista Christensen/DC/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA, HILBERTJ@UCMAIL.UC.EDU
Date: 10/01/2012 11:45 AM
Subject: Re: Recommended AM based JEM

Bob,
The lower panel of Figure 1 appear to reverse the colors and labeling of the two functions. Further, the exponential fx only has two segments.
I would also like to know what the fit statistics are for these functions and for those in the previous modeling efforts. I think the justification sounds good but the fit numbers need to be made available.
As for the weighted functions, Krista can very likely implement the SAS code if someone can share the data and older code. I don't think the weight should be jettisoned for expediency when we have staff that can complete it.
Thanks,
Tom
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Washington, DC 20460
Phone: 703-347-8570

-----Bob Benson/R8/USEPA/US wrote: -----
To: Thomas Bateson/DC/USEPA/US@EPA, Krista Christensen/DC/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA, Danielle DeVoney/DC/USEPA/US@EPA, HILBERTJ@UCMAIL.UC.EDU
From: Bob Benson/R8/USEPA/US
Date: 10/01/2012 12:58PM
Cc: David Berry/R8/USEPA/US@EPA, brattin@srcinc.com
Subject: Recommended AM based JEM
Thank you all for the productive discussion last Thursday! We have consolidated the discussion points into a full proposal for developing the JEM based on the arithmetic mean of the IH data sets. The recommended approach and data plots are attached. We will try to answer any questions you have.
We think this recommended approach has the following advantages:
1) It is qualitatively similar to the approach used by UC in deriving the GM-based JEM
2) It uses the IH data in a scientifically defensible manner
3) It uses the information on engineering controls put in place at various dates in a defensible manner
4) The plots show the fits are reasonable
We do not know if Linda can implement the variance weighted calculation in SAS. If that is possible, we will use the variance weighted calculations. If not, we will use the un-weighted calculations that we have now.
We do not believe that additional discussion will reveal a superior approach. Therefore, we are asking for your concurrence with the recommended approach by COB October 5 or before.
(See attached file: Proposed Approach for JEM Oct 2012 v2.doc)

[attachment "Proposed Approach for JEM Oct 2012 v2.doc" removed by Thomas Bateson/DC/USEPA/US]